

### **REMARKS**

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Office Action dated June 7, 2005 has been received and its contents carefully reviewed.

Applicant acknowledges and thanks the Examiner for indicating that claims 6-13, 15-18, 20, 21, and 23 contain allowable subject matter.

By this amendment, claims 1, 7-8 and 9-13 are hereby amended and claims 2-6 and 14-23 are canceled. Accordingly, claims 1, 7-8 and 9-13 are pending. Further, the drawings and the specification have been amended. Reexamination and reconsideration are respectfully requested in view of the above amendments and the following remarks.

#### **I. Objections to the Drawings**

The Office Action objects to the term “phase separator” in Figs. 3-7. Figs. 3-7 have been amended to replace the term “phrase separator” with the term “phrase splitter.” Figs. 3-6 have been further amended to replace the term “multiplier” with the term “squarer.”

Further, the Office Action objects to the drawings because certain reference numerals specified in the drawings do not comport with the specification, or are not set forth in the specification. The specification has been amended so that the reference numerals now comport with the drawings.

Accordingly, withdrawal of the objection to the drawings is respectfully requested.

#### **II. Objection to the Specification**

The Office Action objects to the specification based on minor informalities. The specification has been amended to obviate the objection. A clean and a marked-up copy of a substitute specification has been provided. Accordingly, withdrawal of the objection to the specification is respectfully requested.

### III. Objection to the Claims

The Office Action objects to claims 12 and 13 for failing to further limit the subject matter of claim 10. Claims 12 and 13 have been amended to obviate the objection.

Further, the Office Action objects to claims 2, 7, 9, 11, 13, 16, 18, 21 and 23 because of minor informalities. Claim 7, 9, 11 and 13 have been amended to obviate the objection. Claims 2, 16, 18, 21 and 23 have been canceled.

Accordingly, withdrawal of the objection to the claims is respectfully requested.

### IV. Rejection Under 35 U.S.C. § 112, Second Paragraph

The Office Action rejects claim 22 as being indefinite. Claim 22 has been canceled, and thus the rejection with respect to this claim is now moot.

### V. Rejection Under 35 U.S.C. § 102(b)

The Office Action rejects claims 1-5, 14 and 19 under 35 U.S.C. § 102(b) over Scarpa (U.S. Patent No. 5,673,293). The rejection is respectfully traversed.

Scarpa does not disclose or suggest at least an operator for calculating each of the digital baseband real/imaginary signals interpolated and outputted from a resampler, and outputting the calculation; a pre-filter for passing only a frequency of a particular band to recover the symbol clock from the output of the operator; a timing error detector for detecting timing error information from the output of the pre-filter; a filtering unit for filtering only the low passband signal from the timing error information outputted from the timing error detector; and an NCO for generating two times the frequency of the symbol clock recovered according to low pass signals of the filtered timing error information and outputting to the resampler, as recited in independent claim 1.

Scarpa instead, at Col. 5, lines 35-45, discloses using a generic QAM timing recovery module 147 to provide QAM symbol timing recovery. Nowhere does Scarpa disclose or suggest the above-noted features of independent claim 1.

Therefore, independent claim 1 defines patentable subject matter. Independent claim 8, 10 and 12 incorporate allowable subject matter, and therefore define patentable subject matter. Claims 7, 9, 11 and 13 variously depend on the respective independent claims, and therefore, at least for this reason, define patentable subject matter.

Claims 2-5, 14 and 19 are canceled, and thus the rejection with respect to these claims is now moot.

According, withdrawal of the rejection under 35 U.S.C. § 1.2(b) is respectfully requested.

#### VI. Provisional Rejection Under Obviousness-type Double Patenting

The Office Action provisionally rejects claims 1-5, 14 and 19 under the judicially created doctrine of obviousness-type double patenting over claims 1-5, 14 and 19 of copending Application No. 10/720,472.

Applicant acknowledges that the rejection is provisional. Applicant will address the provisional rejection when the Examiner indicates that the application is in condition for allowance except for the provisional rejection.

#### VII. Conclusion

Applicants believe the foregoing amendments place the application in condition for allowance and early, favorable action is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to

discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Dated: December 7, 2005

Respectfully submitted,

By

  
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Attachments

Figs. 3-7

Substitute specification (clean copy and marked-up copy)

**AMENDMENTS TO THE DRAWINGS**

The attached sheet(s) of drawings includes changes to Figs. 3-7. These sheets, which include Figs. 3-7, replace the original sheets including Figs. 3-7.

Attachment:        Replacement sheets  
                      Annotated sheet showing changes

FIG. 3

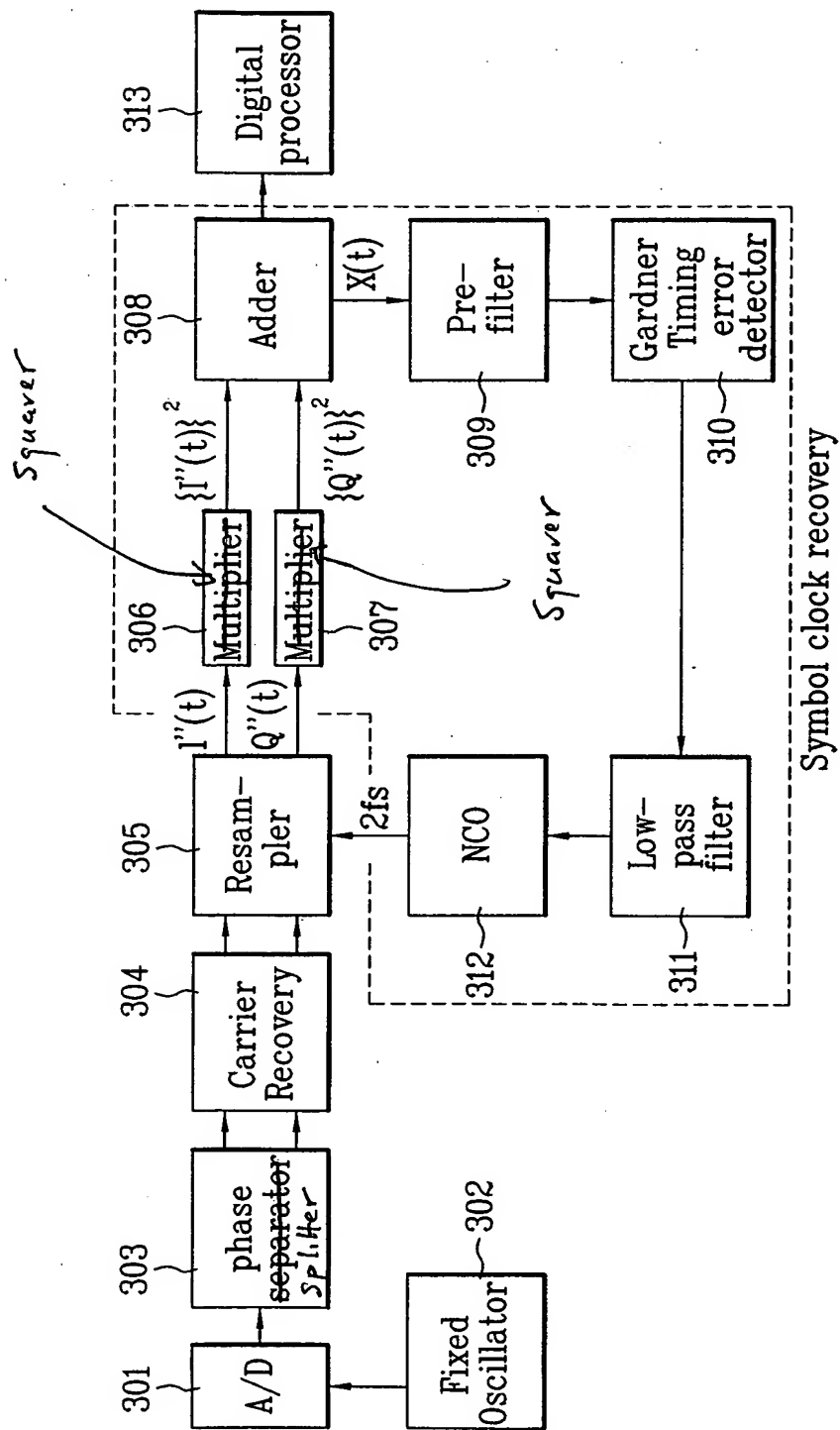


FIG. 4

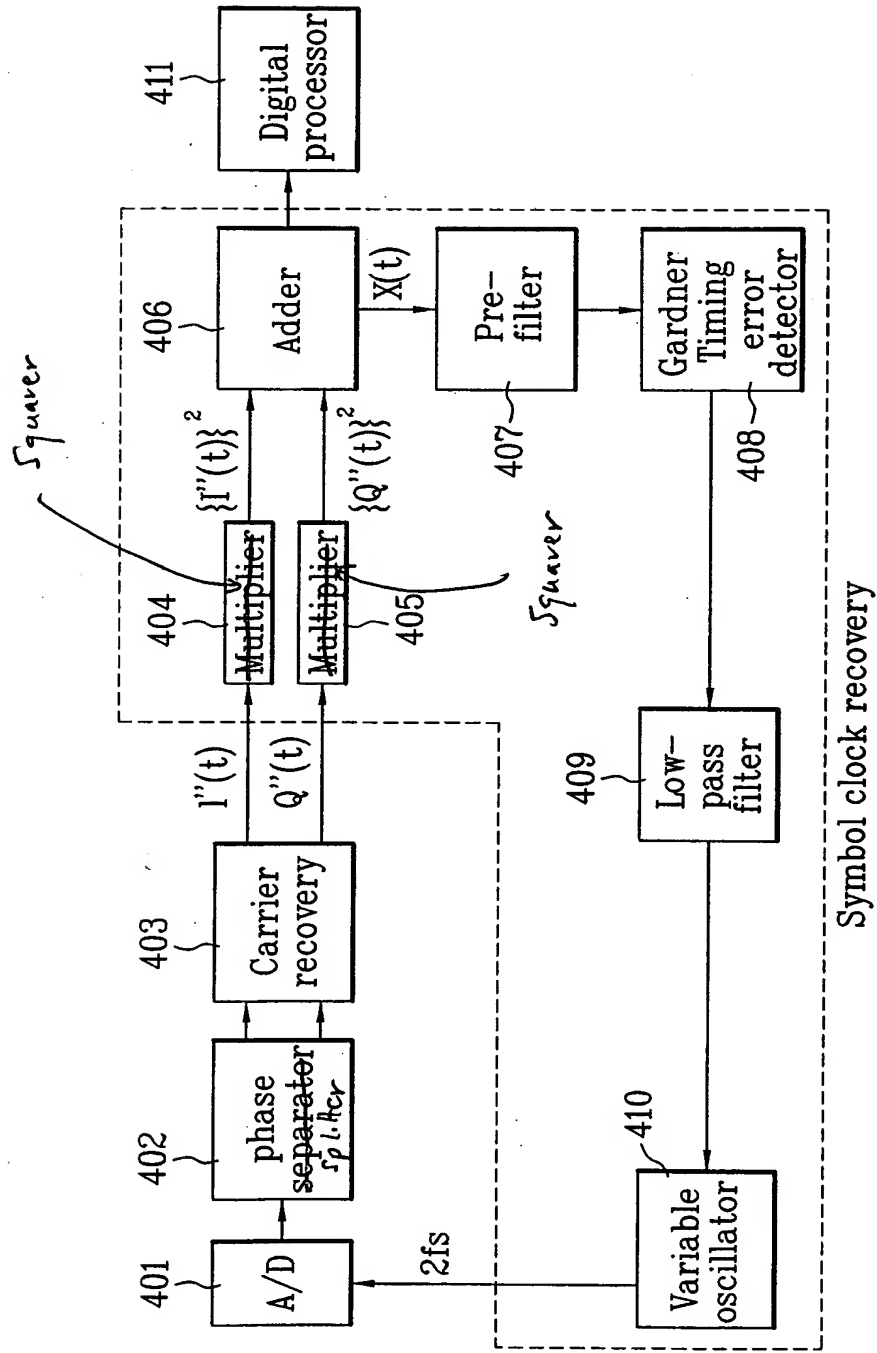


FIG. 5

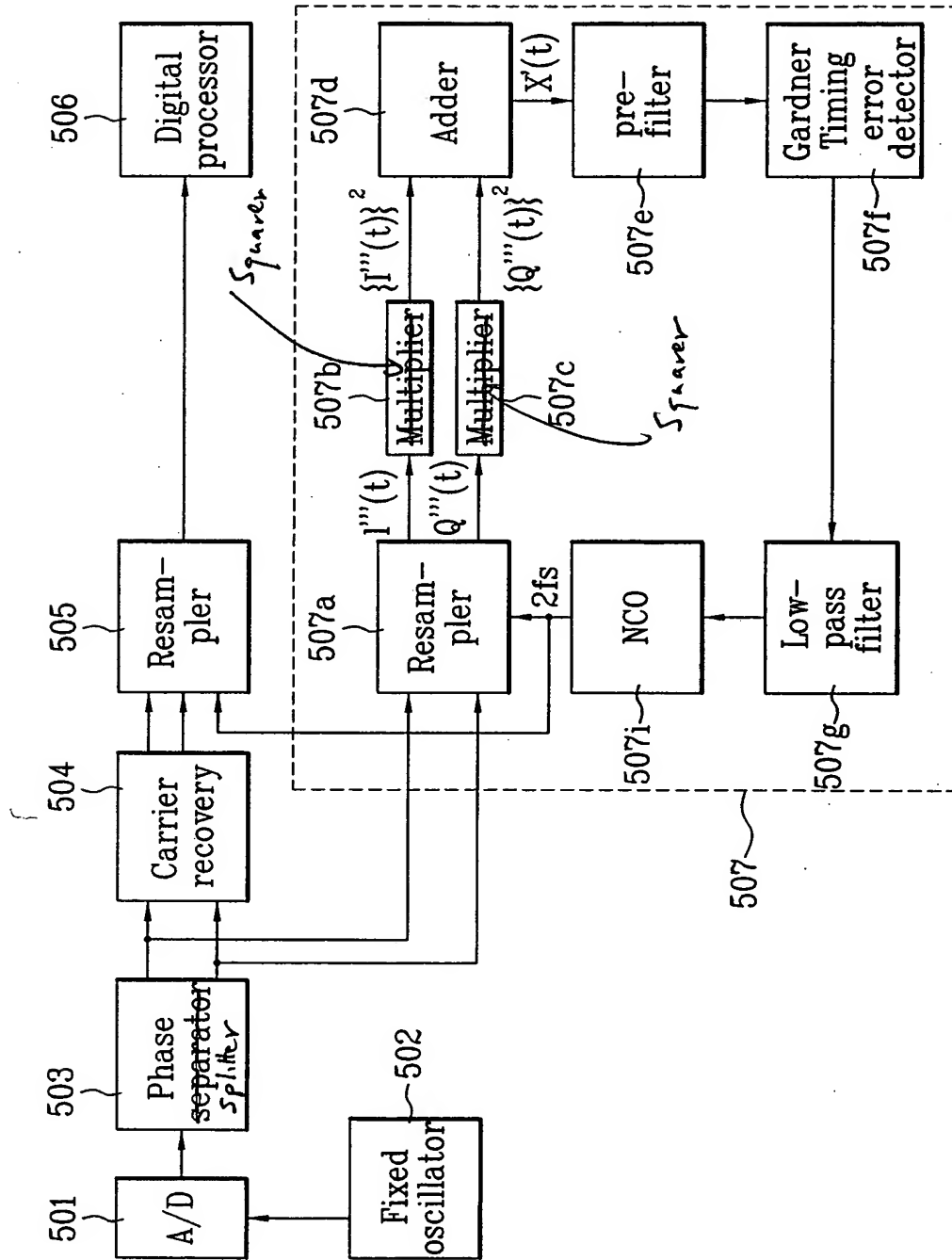


FIG. 6

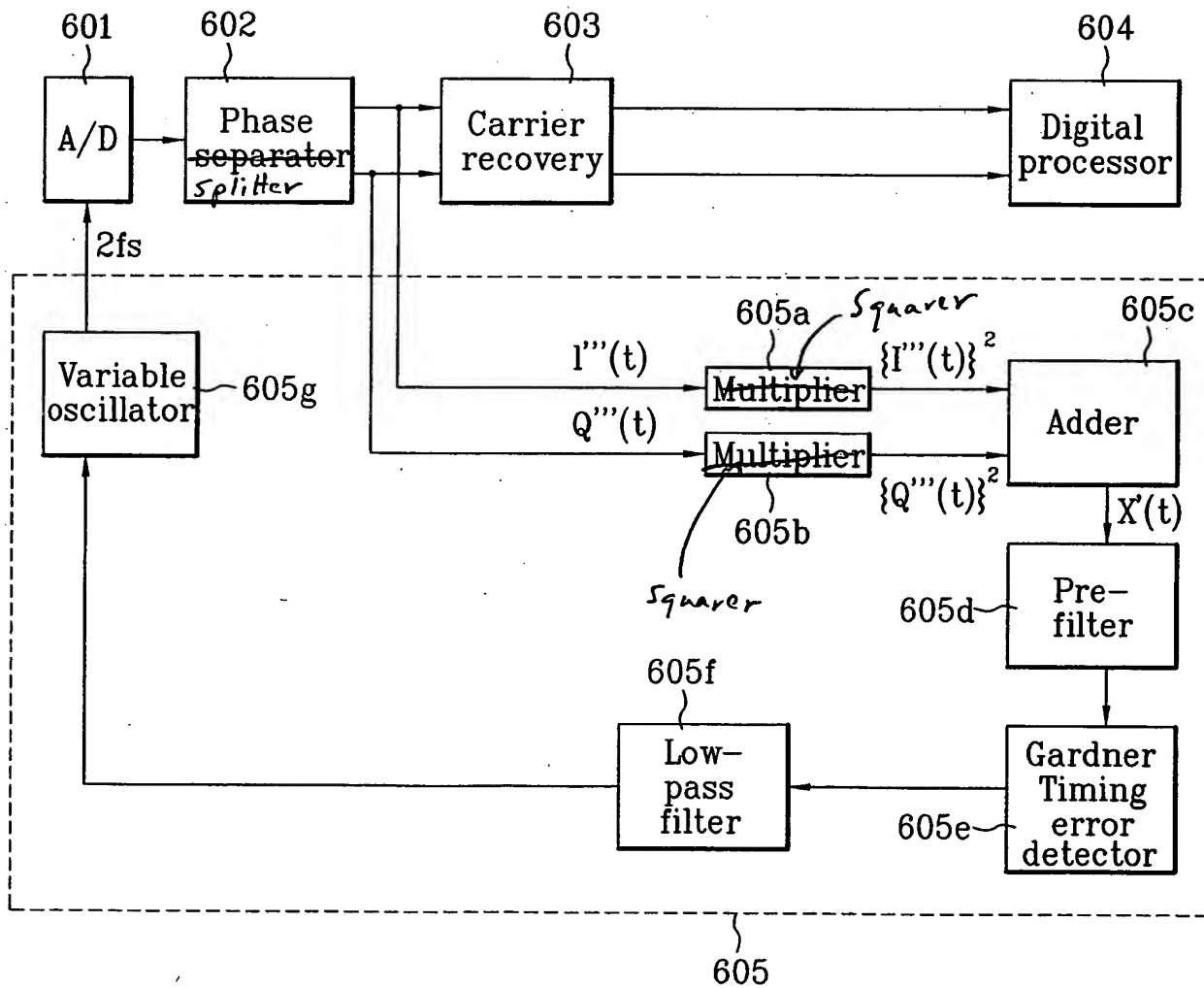


FIG. 7

